REMARKS

In the Office Action the Examiner noted that claims 1-9 and 14 are pending in the application, and the Examiner rejected all claims. By this Amendment, claim 14 has been cancelled without prejudice or disclaimer, and claims 1 and 9 have been amended. No new matter has been presented. Thus, claims 1-9 remain pending in the application. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Claim Rejections Under 35 USC §102

In items 7-9 on pages 2-3 of the Office Action the Examiner rejected claims 8 and 14 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,943,480, issued to Neidhardt (hereinafter referred to as "Neidhardt"). By this Amendment, claim 14 has been cancelled without prejudice or disclaimer. The Applicants respectfully traverse the Examiner's rejection of claim 8.

Claim 8 of the present application recites monitoring a communication between a server and a client, the communication being from the server to the client, and counting a receivable data size and a connection count of which said server notifies said client.

In the method disclosed in Neidhardt, the network administrators grasp the entire traffic through a resource relating to the object to be measured, and the congestion is determined based on whether there is an overflow in the resource. This method does not estimate the load of the server from the behavior of one connection, such as the communication from the server to the client of claim 8. Therefore, the method of Neidhardt cannot be applied to, for example, a router on the client's side, which is one non-limiting example of an embodiment enabled by claim 8 of the present application. Claim 8 is directed to a method which is performed at a device connected between the server and the client, such as a router on the client's side, and it is possible to determine the load of the server by monitoring the connection between the client and the server which is to be measured.

Further, Jacobson does not cure the deficiencies of Neidhardt in regard to claim 8 of the present application. With Jacobson, the terminal, which changes the window size, communicates with the server directly, wherein the terminal sends a request to the server, and the current load of the server can be obtained based on a response time to the request and an

error ratio. Thus, with the technology disclosed by Jacobson, it is not necessary to determine the load of the server passively, as does the method of claim 8 of the present application.

Also, claim 8 of the present application recites "storing a maximum value of the receivable data size per connection, and judging, if the receivable data size per connection becomes small with respect to the maximum value, that said server is under a high load." The Applicants respectfully submit that Neidhardt does not disclose or suggest at least these features of claim 8.

Neidhardt discloses a method of detecting "camouflaged congestion" in a system. This problem occurs when a transport protocol reduces the number of packets in traffic due to some problem, and the resulting traffic flow looking low even though excessive demand is being placed on the system (Column 2, Lines 54-65). In other words, if a network administrator is only monitoring the volume of arriving traffic, he would be mistakenly unaware of the need to increase the capacity of the network. The system disclosed in Neidhardt monitors outgoing queues in a system at set intervals (i.e., every 20 milliseconds) to determine the size of the queue at the end of the interval and the average occupancy over the interval (Column 7, Lines 36-41). The monitor marks a time at which an overflow of the queue occurs in the interval, and labels that time as O1. The monitor continues taking and storing measurements every 20 milliseconds until the next queue overflow occurs, at which the time is labeled as O2. The monitor then examines the measurement data taken between O1 and O2 to determine whether the populations of the queue are increasing between the end of the overflow and the next overflow (Column 7, Line 31 through Column 9, Line 12). "If the population estimates are uniformly increasing, that indicates that following the queue overflow, the transport protocol, for example TCP, reduced window sizes and the window sizes were then slowly increased. Therefore, even though the traffic volume appears below capacity, camouflaged congestion is detected" (Column 9, Lines 4-10).

Therefore, Neidhardt discloses recording at least two instances of overflow of a queue, and then looks for uniformly increasing queue populations between the queues to determine congestion in the system. This is a completely different process than that recited in claim 8 of the present application.

The Examiner stated that Neidhardt discloses storing a maximum value of the receivable data size per connection, and judging, if the receivable data size per connection becomes small with respect to the maximum value, that said server is under a high load. However, the Applicants respectfully submit that Neidhardt performs neither of these operations. No maximum value of the receivable data size per connection is stored. Neidhardt merely

determines the size of the queue at the end of a time interval, and the average occupancy over the interval (Column 7, Lines 39-41). This does not indicate the receivable data size per connection from a client to a server, because only the occupancy of the resources of the queue itself is being monitored. The queue may contain packets from different clients, and the limited resources of the queue would not allow a proper evaluation of the maximum value of the receivable data size per connection. And only an average value of the resources used in that queue is stored, which is obviously not a maximum value of the receivable data size per connection between a client and a server. Therefore, not only is no maximum value stored, but the values that are averaged do not indicate a receivable data size for a connection between a client and a server.

Further, as discussed above, Neidhardt does not judge that the server is under a high load if a receivable data size per connection becomes small with respect to a maximum value. As already discussed, no maximum value is referred to at all. And Neidhardt determines congestion in response to steadily increasing queue populations between queue overflows, not the queue population (or, even further, definitely not a receivable data size per connection) becoming smaller compared to the stored average value (which, again, is also not a stored maximum value of the receivable data size per connection). In other words, it takes a minimum of two queue overflows, and the subsequent decrease in population after the first queue overflow, to even begin the evaluation of the camouflaged congestion problem in Neidhardt, and then that evaluation is looking for increasing numbers, not a decrease. Even if the queue overflows could, arguendo, be considered as the receivable data size per connection becoming smaller with respect to a stored value, this by itself definitely does not indicate congestion in Neidhardt. Because if there are multiple queue overflows that do not have a pattern of uniformly increasing queue populations between the overflows, the system of Neidhardt will not indicate congestion. Therefore, it would be quite apparent to one skilled in the art that Neidhardt does not judge that a server is under a high load due to the queue populations even simply decreasing, and certainly does not judge that a server is under a high load due to a receivable data size per connection becoming small with respect to a stored maximum value of the stored maximum value of the receivable data size per connection.

The Examiner stated on page 3 of the Office Action (citing Column 9, Lines 1-12, Column 2, Lines 39-65, and Column 4, Lines 3-15) that the population estimates uniformly increasing after a buffer overflow is the condition where the queue and window size have reached their maximum and subsequently the window size is decreased from that maximum, and further stated that both are indicative of the server being under high load. However, a queue reaching

its maximum population is not tantamount to storing a maximum value of the receivable data size per connection. And, as discussed in the preceding paragraph, the queue reaching overflow is not necessarily indicative of the server being under a high load in Neidhardt, because it is not the overflow that causes the evaluation of congestion. Rather, it is the uniform increase in queue population between at least two consecutive overflows.

Therefore, Neidhardt does not disclose or suggest at least the features of claim 8 discussed above. Accordingly, Neidhardt does not disclose every element of the Applicants' claim 8. In order for a reference to anticipate a claim, the reference must teach each and every element of the claim (MPEP §2131). Therefore, since Neidhardt does not disclose the features recited in independent claim 8, as stated above, it is respectfully submitted that claim 8 patentably distinguishes over Neidhardt, and withdrawal of the §102(e) rejection is earnestly and respectfully solicited.

Claim Rejections Under 35 USC §103

In items 11-14 on pages 4-7 of the Office Action the Examiner rejected claims 1-2 and 9 under 35 U.S.C. §103(a) as being unpatentable over Neidhardt in view of "Congestion Avoidance and Control" by Jacobson et al. (hereinafter referred to as "Jacobson"). The Applicants respectfully traverse the Examiner's rejections of these claims.

Claim 1 of the present application, as amended, recites monitoring a communication between a client and a server, the communication being from the client to the server, and the communication including at least one connection having a communication data size.

As previously discussed in this Amendment, in the method disclosed in Neidhardt, the network administrators grasp the entire traffic through a resource relating to the object to be measured, and the congestion is determined based on whether there is an overflow in the resource. This method does not estimate the load of the server from the behavior of one connection, such as the communication from the client to the server of claim 1. Therefore, the method of Neidhardt cannot be applied to, for example, a router on the client's side, which, as discussed above in regard to claim 8, is one non-limiting example of an embodiment enabled by claim 1 of the present application.

Further, as also discussed above in regard to claim 8, Jacobson does not cure the deficiencies of Neidhardt in regard to claim 1 of the present application.

Also, claim 1 of the present application recites recording a maximum size value of the

communication data size and judging, if the detected change of the communication data size of the connection decreases below a predetermined proportion of the recorded maximum size value, that said server is under a high load. As discussed above in regard to claim 8 of the present application, Neidhardt does not disclose, suggest, nor even contemplate at least these features of claim 1. Further, as Jacobson apparently merely discloses reducing the window size during high load by decreasing the window size to a size that is proportional to the previous maximum window size, Jacobson does not cure the deficiencies of Neidhardt in regard to claim 1 of the present application.

Further, even if Jacobson did, arguendo, cure the deficiencies of Neidhardt, there would be no motivation for combining the two references. The Examiner stated that it would have been obvious to modify Neidhardt with the Jacobson reference to be able to judge, if the detected change of the communication data size of the connection decreases below a predetermined proportion of the recorded maximum size value, that said server is under a high load. However, Neidhardt discloses that TCP typically reduces the window size by half in response to transmission errors (Column 3, Lines 44-57), and the method disclosed in Neidhardt is configured to follow this system. Therefore, by reducing the window size by half, which is a proportion of the previous window size, there is nothing to be added to Neidhardt by the Jacobson reference as cited by the Examiner. Further, this would add nothing to the disclosure of Neidhardt, as a minimum of two queue overflows, and then an indication of uniform population increase in the queue, would be required to show the congestion monitored in Neidhardt. Thus, there is no motivation to modify Neidhardt with Jacobson, and further any such combination would not add any value to the system of Neidhardt.

Therefore, neither Neidhardt nor Jacobson, either alone or in combination, disclose or suggest the features of claim 1 of the present application. For a proper §103 rejection, the cited references must combine to disclose all of the features of the rejected claim. Therefore, it is respectfully submitted that claim 1 patentably distinguishes over the cited references.

Claim 2 depends from claim 1 and includes all of the features of that claim plus additional features which are not disclosed or suggested by the cited references. Therefore, it is respectfully submitted that claim 2 also patentably distinguishes over the cited references.

Claim 9 of the present application recites similar features to those discussed above in regard to claim 1, and which are not disclosed or suggested by the cited references. Therefore, it is respectfully submitted that claim 9 also patentably distinguishes over the cited references.

In items 15-17 on pages 7-8 of the Office Action the Examiner rejected claims 3 and 5

under 35 U.S.C. §103(a) as being unpatentable over Neidhardt in view of Jacobson in further view of U.S. Patent No. 5,400,329, issued to Tokura et al. (hereinafter referred to as "Tokura"). The Applicants respectfully traverse the Examiner's rejections of these claims.

As previously discussed, claim 1 of the present application patentably distinguishes over Neidhardt and Jacobson. Further, as Tokura apparently merely discloses that packets of small size can be ignored for congestion calculations, Tokura does not cure the deficiencies of Neidhardt and Jacobson in regard to claim 1. Therefore, as claims 3 and 5 depend from claim 1 and include all of the features of that claim plus additional features which are not disclosed or suggested by the cited references, it is respectfully submitted that claims 3 and 5 also patentably distinguish over the cited references.

In items 18-19 on pages 9-10 of the Office Action the Examiner rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Neidhardt in view of Jacobson in further view of U.S. Patent No. 6,104,717, issued to Coile et al. (hereinafter referred to as "Coile"). The Applicants respectfully traverse the Examiner's rejections of these claims.

As previously discussed, claim 1 of the present application patentably distinguishes over Neidhardt and Jacobson. Further, as Coile apparently merely discloses retaining information of a communication from the start until the end of the communication, Coile does not cure the deficiencies of Neidhardt and Jacobson in regard to claim 1. Therefore, as claim 4 depends from claim 1 and includes all of the features of that claim plus additional features which are not disclosed or suggested by the cited references, it is respectfully submitted that claim 4 also patentably distinguishes over the cited references.

In items 20-22 on pages 10-11 of the Office Action the Examiner rejected claims 6-7 under 35 U.S.C. §103(a) as being unpatentable over Neidhardt in view of Jacobson in further view of U.S. Patent No. 6,219,712, issued to Mann et al. (hereinafter referred to as "Mann"). The Applicants respectfully traverse the Examiner's rejections of these claims.

As previously discussed, claim 1 of the present application patentably distinguishes over Neidhardt and Jacobson. Further, as Mann apparently merely discloses obtaining and comparing sequence numbers from communications to servers from clients, Mann does not cure the deficiencies of Neidhardt and Jacobson in regard to claim 1. Therefore, as claims 6-7 depend from claim 1 and include all of the features of that claim plus additional features which are not disclosed or suggested by the cited references, it is respectfully submitted that claims 6-7 also patentably distinguish over the cited references.

Summary

In accordance with the foregoing, claim 14 has been cancelled without prejudice or disclaimer, and claims 1 and 8-9 have been amended. No new matter has been presented. Thus, claims 1-9 remain pending in the application.

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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